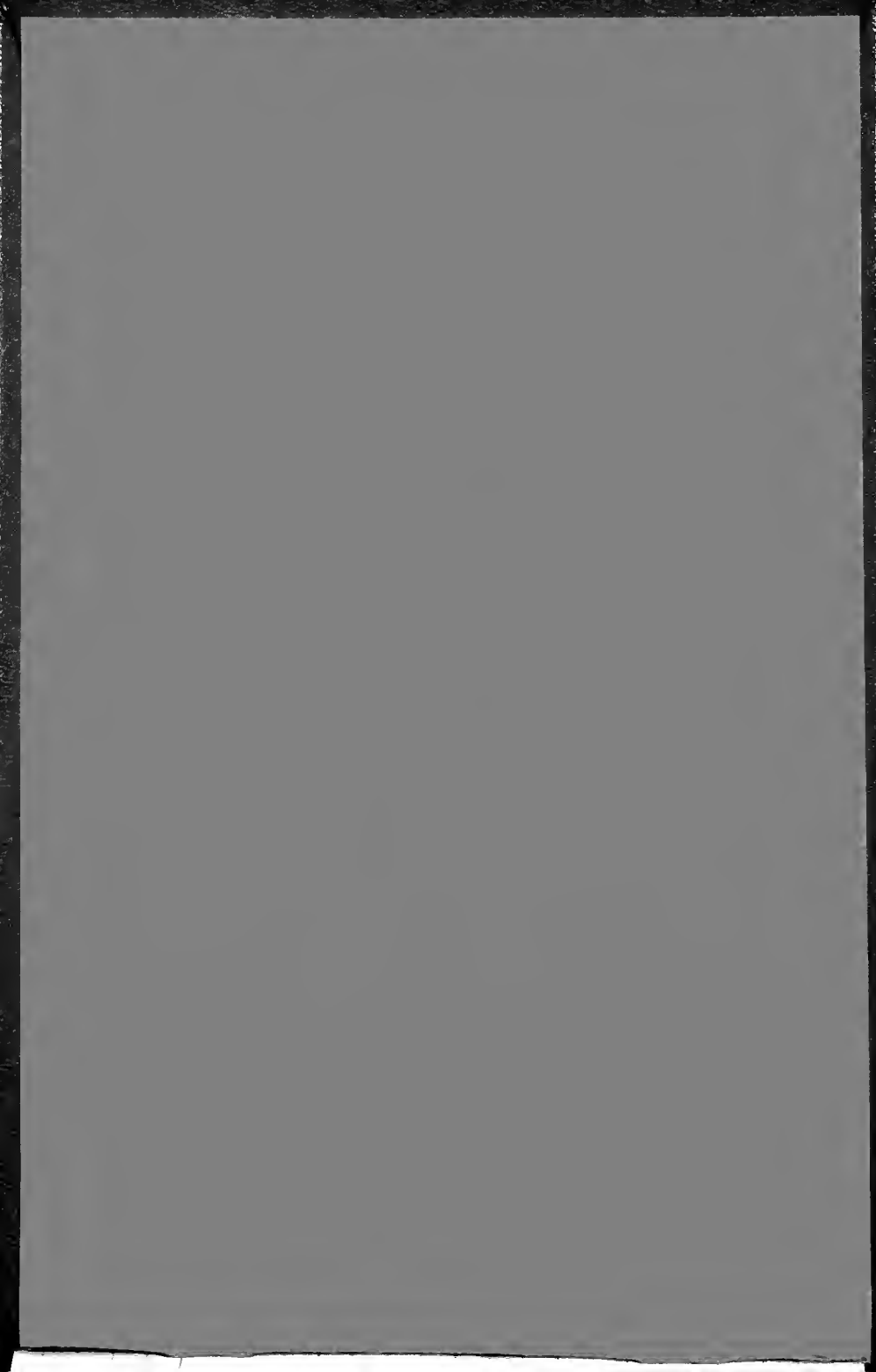


UNITED STATES  
DEPARTMENT OF THE INTERIOR

DI-6

APPROVED DECEMBER 1941



1988 Summer Trip to MONTANA -  
Wyoming

7/24  
Left New Haven @ 6:20 by  
Lim to La Guardia

Flew to Denver  
- Drought conditions  
evident in browning of  
fields and thin cover.

Denver to Billings  
Fires in Wind River  
Range & Absarokas.

Met by Kirk & w/ news of  
a dead battery & tire  
problems.  
Wm Hicks had to take jet  
to Alaska.

7/25 DAY IN CAMP & IN Red Lodge  
reading Blazer & self  
for field.

7/26 Left for Mellville Mont.  
at 10:30 arr abt 2:30



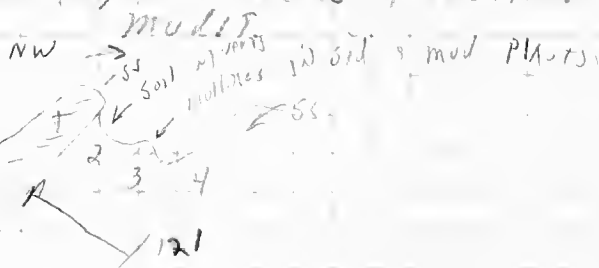
7/26

Hot & Clear  
NW 1/4 Sec 23, T6N, R15E, Wheatland Co.,  
Loc. 887 = KRJ 88141 mount

Simpson Quarry of Krause,  
In the Bear Fm.

VERT DATE IS  
PUECAN

SECTION CONSISTS OF TAN TO  
GREY SS lenses & bedded  
X bedded vfg.  
w/ interbeds of sh. &



1. X bedded. fgs. ss.
2. Brown mudst. w/ SLICKS.  
rooted, no bedding remains
3. mollusk layer. siliceous & w/  
mudst. roots, sticks,  
poor lenses
4. ss.



7/26/88

Loc. 881 (CONT.)

Leaves:

PLATANUS *RAYNOLDsii* ~~very~~  
dom.

Cercid. gen? (base only)

INOCERA *hesperia*

TAXODIUM *striat*

Hell Creek



Lebo

Melville

Above The Quarry

S.E. & up section

Ledges become more  
lenticular & make up  
steadily less of the  
section.

Lebo Fm. must form the  
broad valley here

W the tree covered  
fluvial Melville forming  
the tree covered slopes  
of the south valley wall.





7/26/88

881

Lebo is a swale

Hard to see its  
character.



Melville - Light colored ss.

Lebo - Darker Olive Grey

BEAR. -

7/27

802

Lebo ledges

Equisetum in tops of  
distal splays

Grey mudstones.

Siderite in base of ss.

Some Fresh water ls.  
in chs.

Gordon Nash at Cormex R.

- Knows loc. of Lebo  
Plants.



Cooney Branch 7/27/88

Bob + (Laurance) Cooney

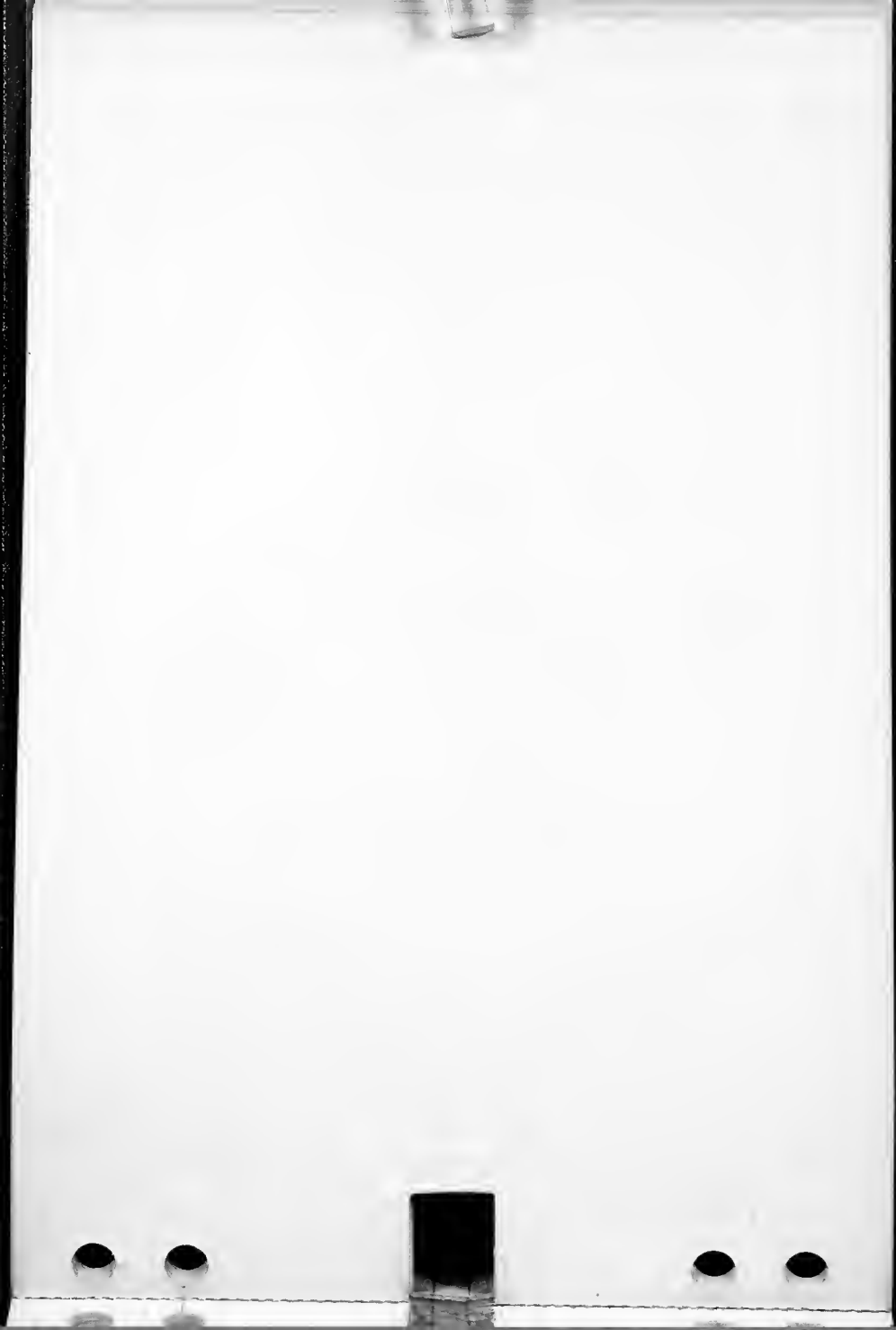
- Lebo ss w. leaves at house

Platanus gueltiana  
Tilia w. Populus

Beac/Lebo

Beac ss are generally light in color

Lebo olive grey shs.  
ss. dark brownish,



7/27/88

Lebo. Fm.  
N. end of

Mudst. dominated seq.

DARK grey to brownish grey  
weathering

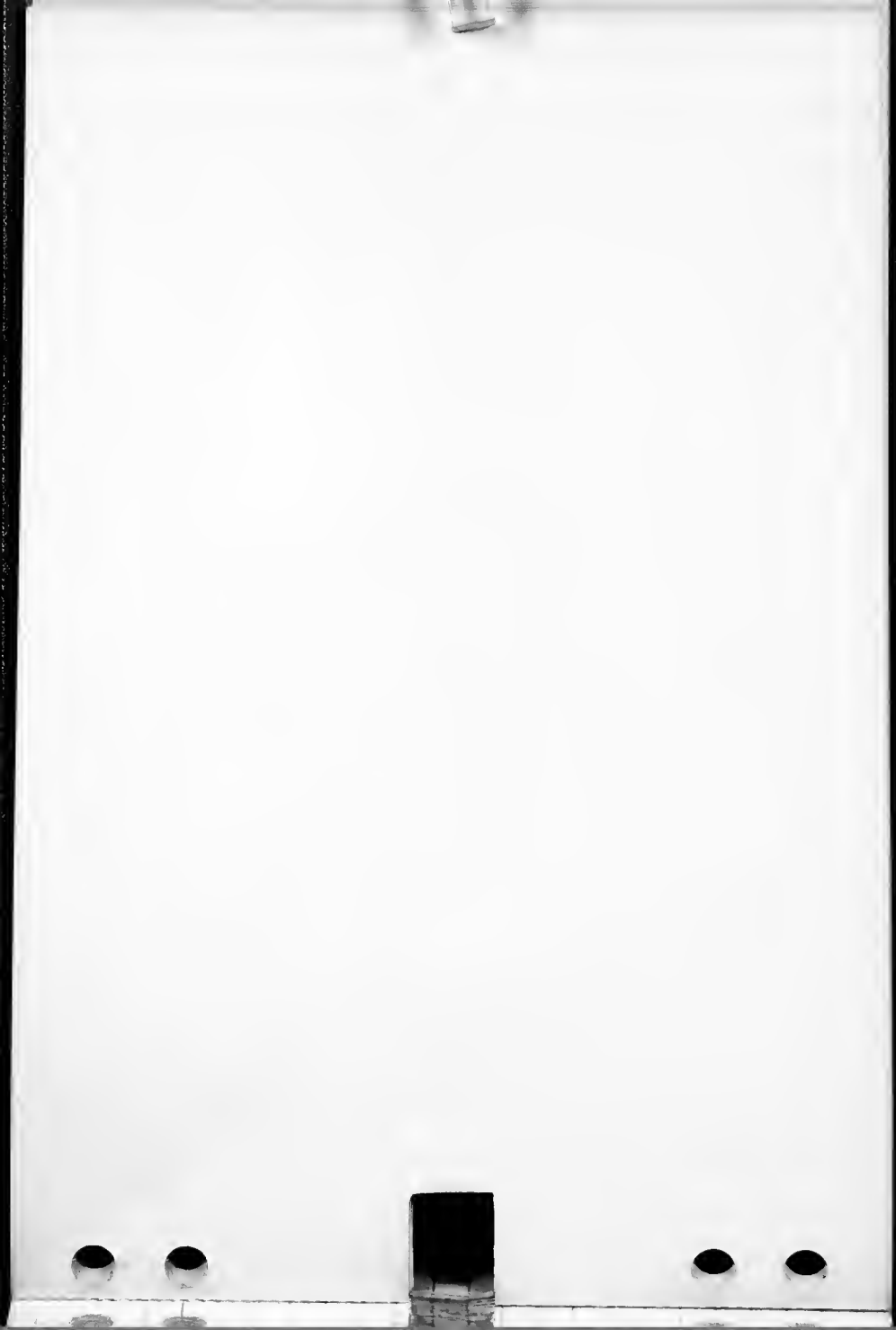
Soil development

Reddish wh. siderite concretions  
in layers.

lens of dirty - tanish ss  
2m. Thick w. clay  
pebbles at base and  
base.

wh. grey & TAN.

looks just like  
Lebo of B.H.B.





7/27/88

Loc 884 - KAJ 88143

- SW 1/4 Sec 2, T4N, R. 14E  
Sweetgrass Camp, Melville Quad.

Mid portion of a 0.8m thick  
bedded ss, w  
rare fresh water ls.  
clms.

PLATANUS guineensis

Alnus

Trochodendron araliifolium

Acer glabrum



885

Lebo

7/27/87

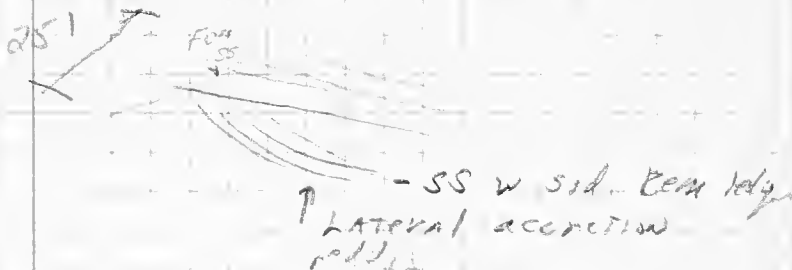
Sheep Feeder Loc.

Melville, NW Quad

Upper Ton.

Mudstone / ss sequence

siderite in mudst.

SS - Rusty Brownish

2'

SS at top of Rusty

3'

mudst

1.5'

shells

7.5'

fossils

↑ upward

V. ss in sh. - ss  
mudst in  
sid.

(very good leaves

Plat. guilleme

Plat. Grayvillensis

Circ. gracilis

Ginkgo. edmonstonei

Eucosmia serrata

Viburnum antiquum

Glyptostrobus europaeus

Cornus nebrascensis



7/27/88

886

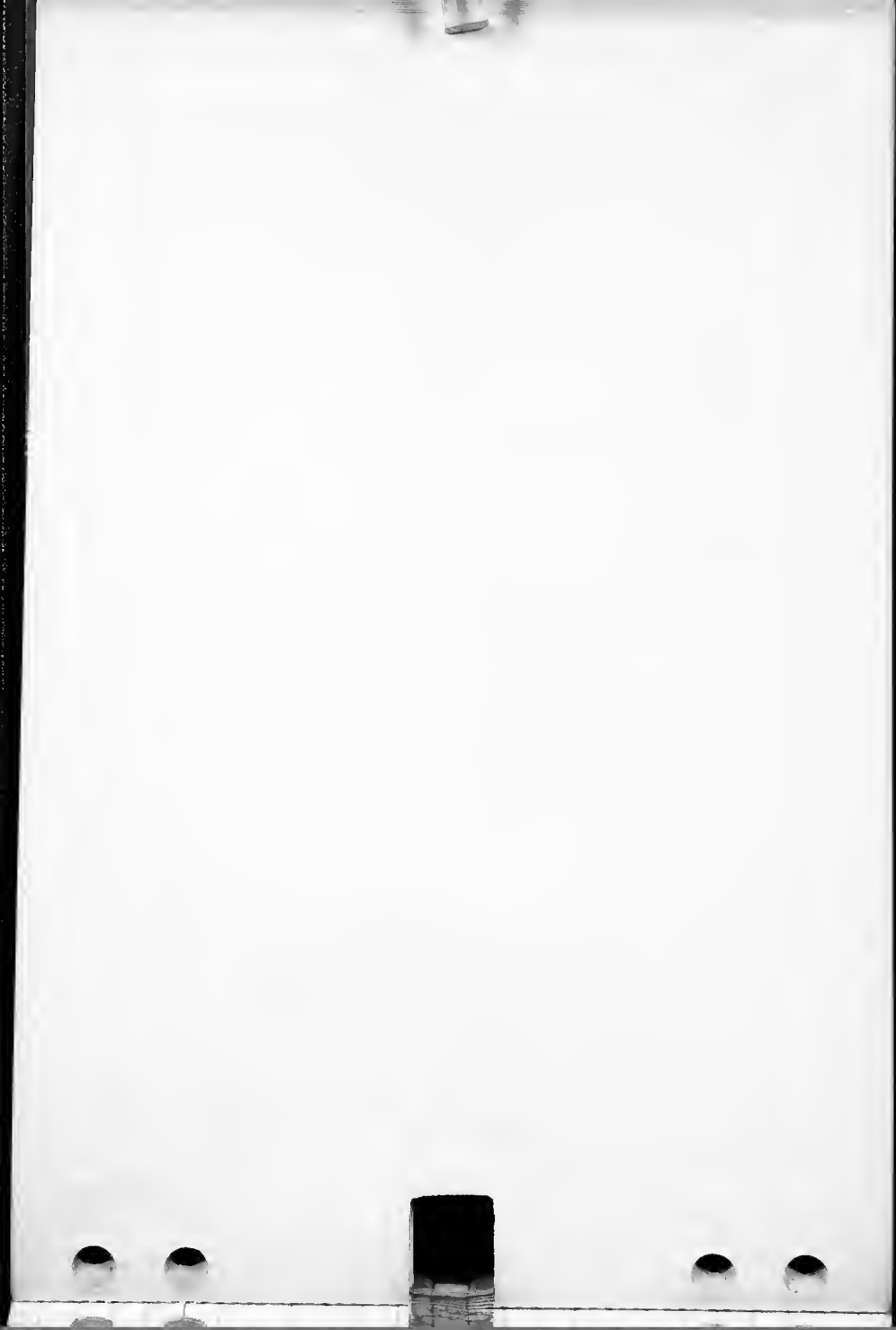
Lower Melville

Site

Lower Tiffany

Zingiberopsis

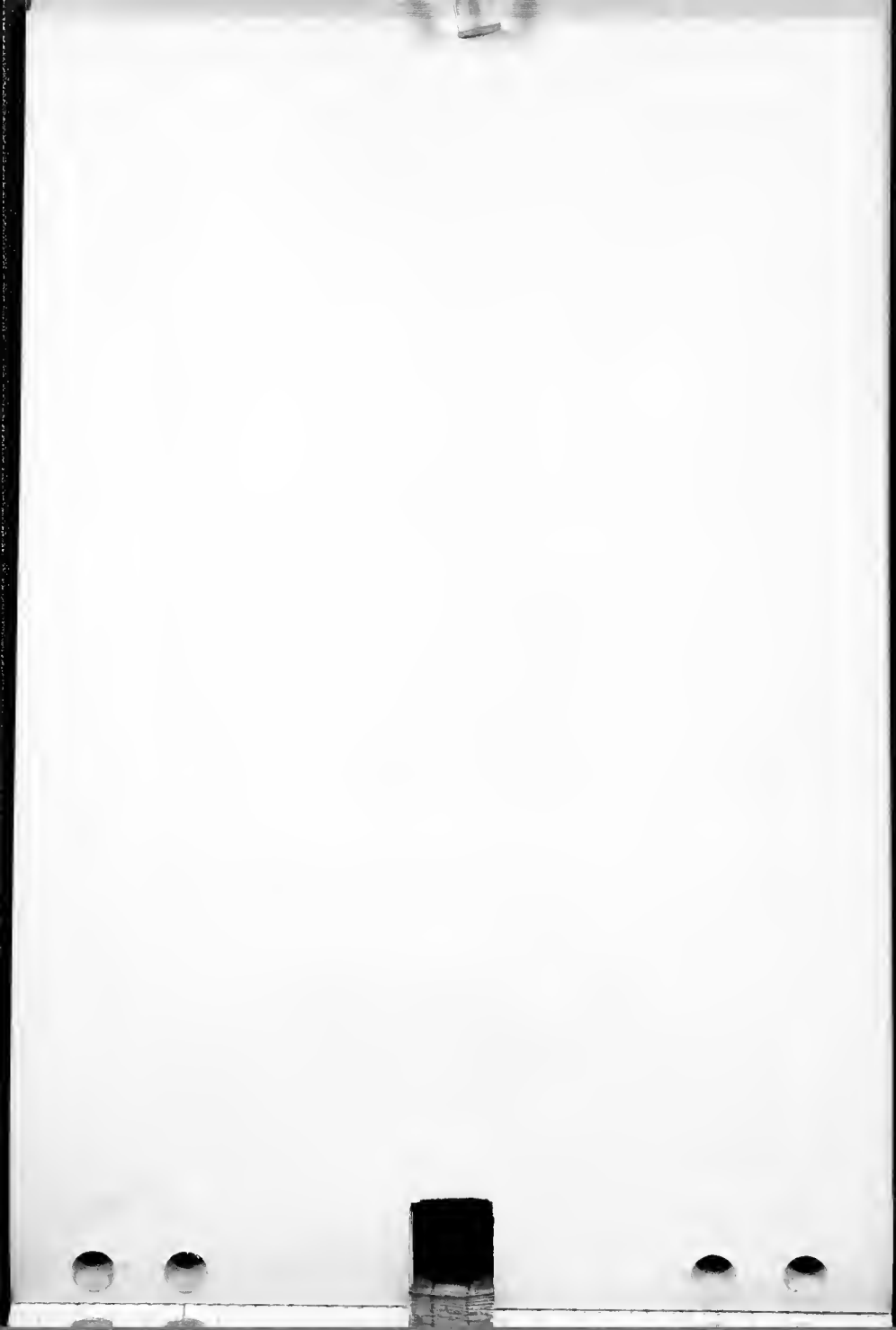
Metasequoia



7/28/88

Introduced Doug Nichols x  
Janet Brown to  
Fort Union Fm.

Scorpion Hollow  
Lucasine.





7/29/88

887 Grimey gulch

carb Shales immediately above  
COAL of UNIT #6 of  
Sec E627

*Pistia correjata* ?



7/30/88

Mesa Verde /  
Meeteetse ss

SW, SW Sec 2, T 8 S R, 23 E

Carbon Co. Mnt

HATCHER PASS Quad

Julith River ss forming

large CUESTA

FLAT & planar x bedded

well ind.

w/ SKOLITHUS TUBES

Grey shale above.

Next ss up w/ SKOLITHUS

Then lighter

Looks like TREVILIAN  
w/ MARINE influence  
in channels.

Meeteetse

Highly fossiliferous

mostly ss

ss - often rusty brown

weathered



7/31/88

DINOSAUR Loc.

Loc 888

Meeteetse Fm.

25m above top of  
Lewey

Ischium? in place.

- w/ other large bones.

- IN A TAN SILTY MUDST.

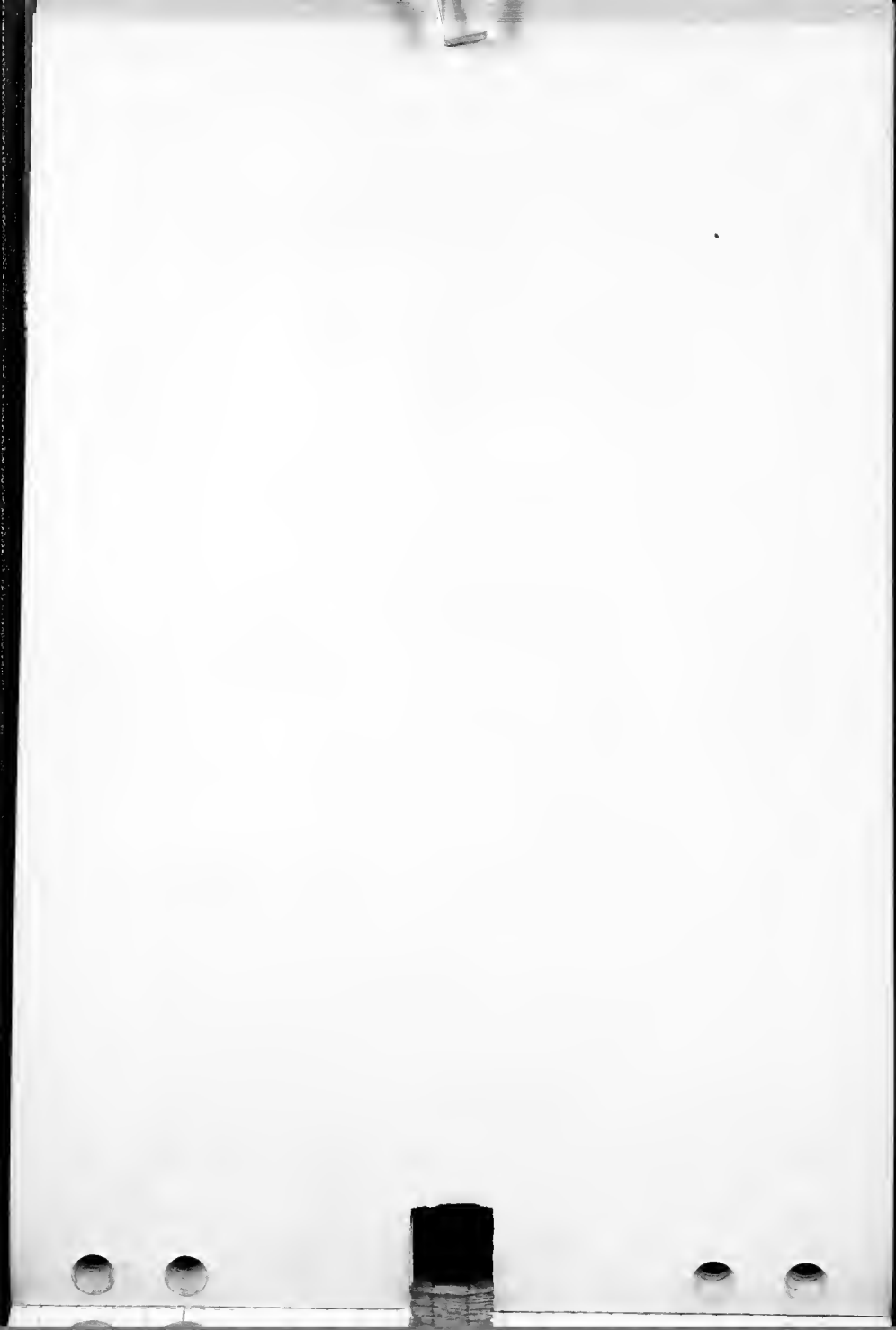
207° From gate IN SECTION  
fenced AT end of  
road

SW, NW, NW, NE Sec 15.

T 8 S, R

1500 m N, 800 m E, SW cor.  
Sec. 15 T 8 S, R 23 E,  
CARBON CO, MONT.

Age of this may well be  
EDMONTONIAN - LATEST CAMP.  
EARLY MACSTRICHTIAN



8/1/84

KLM

W JARDON

889

Bridge Crest

NE, NE, Sec. 1

T. 57N, R. 100W, PARK CO. Wyo

EIK BASIN  $7\frac{1}{2}$ ,

30 yds NW of Pump

- 1st Marine tongue.

Trace fossil JACKING  
5-sided TRACES.

TABULAR SS. & SHALES  
med grey in color

30' thick.

capping a ridge  
FLUVENT SS. on dip  
slope.

2nd Marine looks thin  
or non-existent





8/1/88

w Jason Hicks

bottom of Scorpion Hollow  
Section

located as Stop 1 at 8/1/88

MCCLENNAN  
NE, SE, Sec 1, T57N, R10W  
PAID CO., WYO.

- SKOLITHUS IN SAND AT  
WENT TOP OF SECOND  
MARINE TONGUE
- LARGE FAULT or DIKE  
CROSS 1ST MARINE mbr.  
Trending 025 at NW 73°
- IN THIS AREA WE HAVE  
BOTH UPPER & LOWER MARINE  
TONGUE BUT  
FEWER TRACE FOSSILS  
IN LOWER DIVERSITY  
IN 1ST LOWER TONGUE



8/1/88

~~8/1/88~~

-UNIT MAY BE SOMEWHAT  
THINNER TOP TRAC.  
SS UNIT CAPPED BY  
FLUVIAL SS.

2ND TONGUE

THINNER THAN AT  
COTTONWOOD CREEK  
NO MARINE MOLLUSKS  
FOUND.

Fluvial had same  
Serpentian cones in  
lower portion

Top w/ SKULLS AND  
before a strongly  
Fluvial SS w/ IS  
CLASTS UP TO  
10 CM

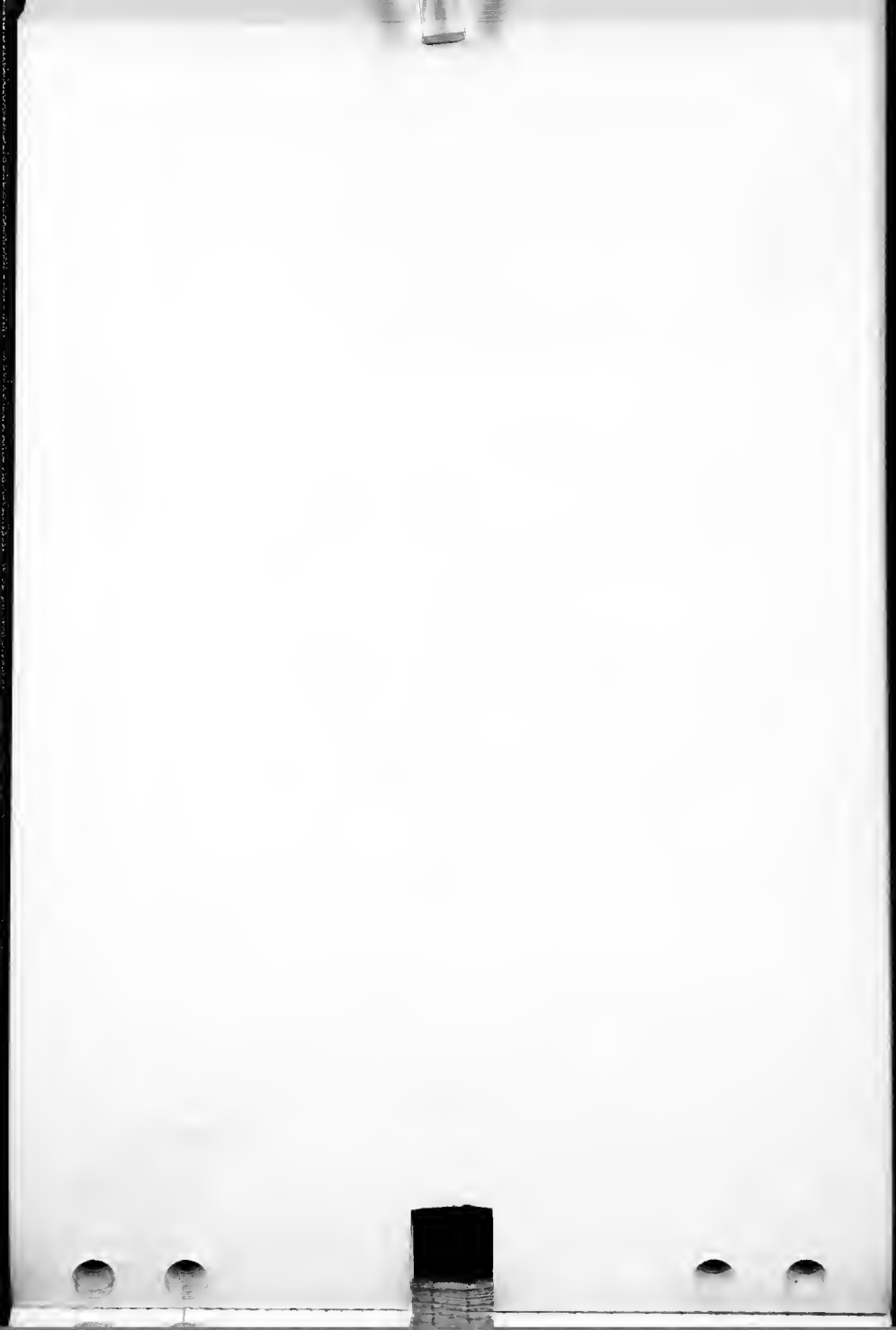
LAKE - perhaps 75m.  
← SKULLS

LINEP #2

MIDDLE SOIL

LINEP #1

LOWER SOIL



8/2/88

Loc.  
8811

SW, NE, Sec 23, T54N, R102W.  
PARK Co. Wyo

ON MAPPED CONTACT  
LANCE MEETEETSE

Looking at Meet.  
Dip.  $71^{\circ} \times 62^{\circ}$  E

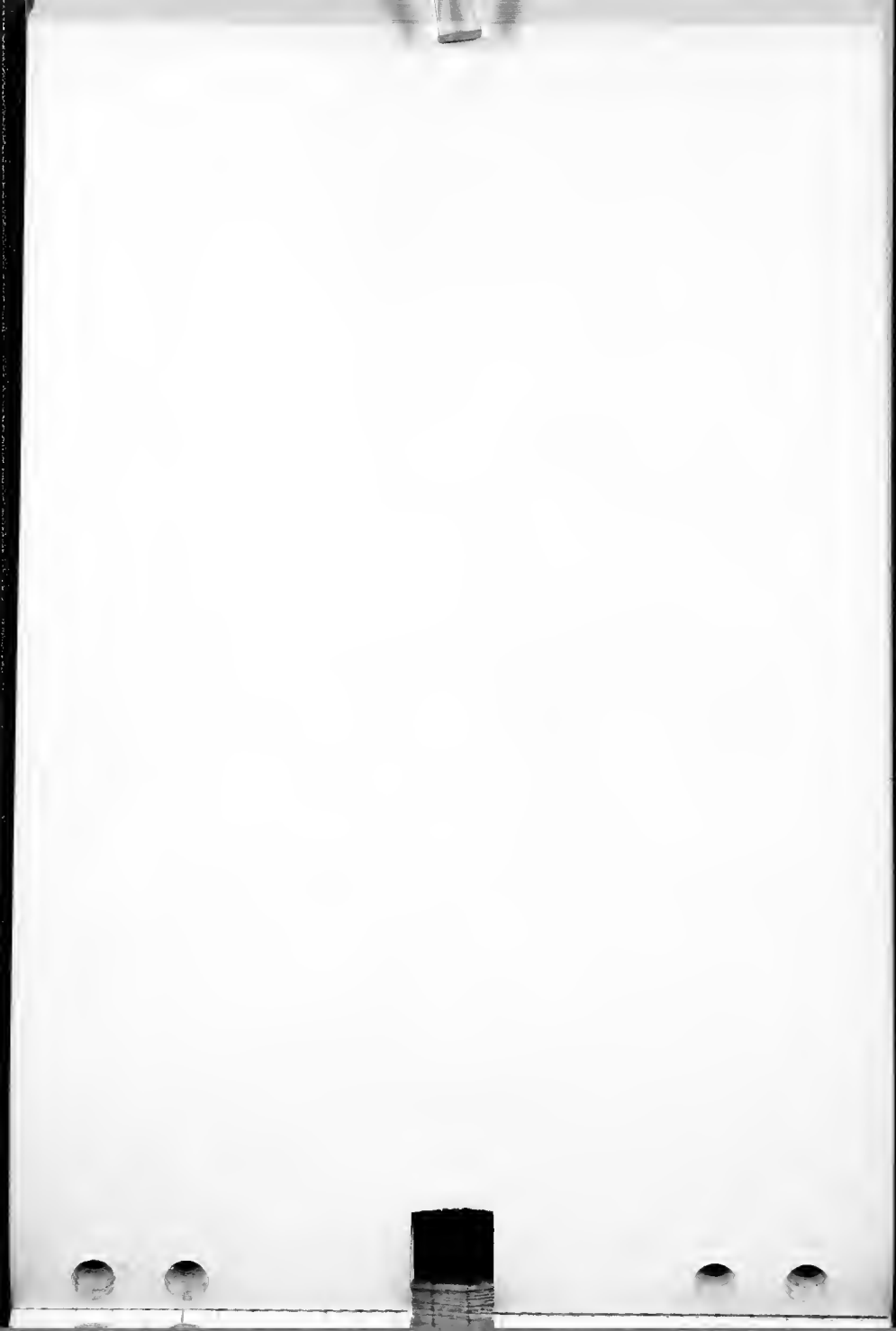
Rim looks DARK grey w  
prominent 2-3m thick  
bands & thick  
fluvial sand.

Walked W. Down Section to  
CONTACT w mesaverde  
TAN to lt. grey ss  
ledges supporting  
trees.  
Dip.  $72-80^{\circ}$  E.

MEETEETSE w COALS IN  
2nd 1/4

Basal 1/4 is soils &  
larger

3rd 1/4 Banded soils w  
FLUVIAL lenses



8/2/88

8811 - (CONT.)

mesquite is thin.

Meeteetse. 1200 - 1440'

may be as much as 3,000'

8/2/88

8812 Meeteetse LAND FILL

Upper 35-40 m of  
Meeteetse w/ well  
developed soils & lignites  
distinctly terrestrial

Lance is fluvial & very  
sandy, at least 100-200  
m thick, mainly SS  
lenses.

Tops of some ledges  
to flat bedded  
limonite impregnated





Loc 8812 (CONT'D.)

W TRACKS & FEEDING CARDS

AT base of 1ST LANCE ledge

found well developed  
soil profile as follows

Soil Profile

A

19W / 1 ft.

B

C 2 ft

SS, lt grey, leached  
w roots  
SS yellow w/  
roots

ROOTS.

Some SS. w/ vertical roots  
penetrating into C horizon

PLANT locality ~~at~~ in ~~the~~  
mudst. above a SS.  
about 20' above base of



Loc. 8612 (contd)

Slope, on boulevard fence

*Quereuxia angulara*

ARAUCARIAN seeds

ELIATES

PLATANOID leaf



8813

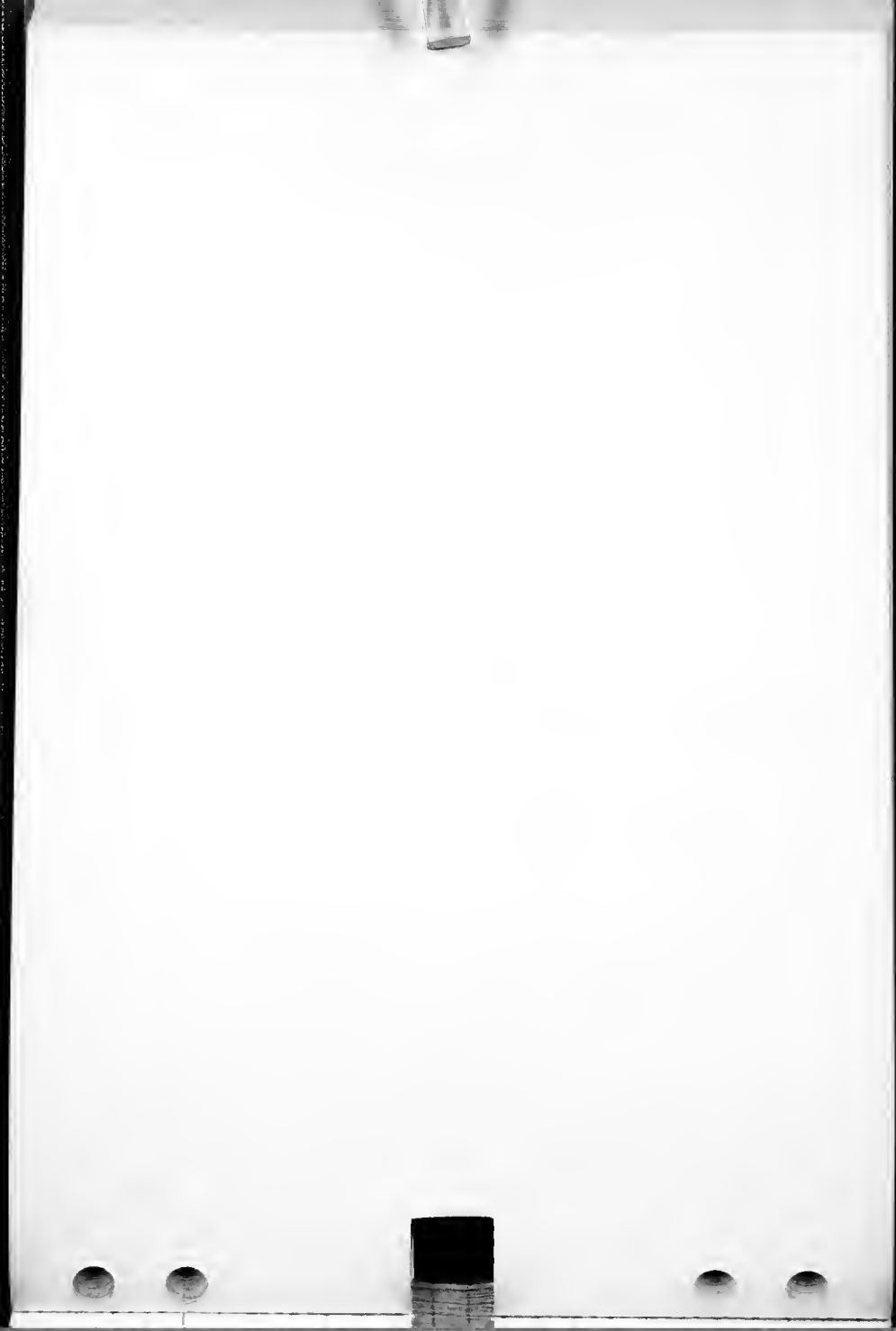
W  $\frac{1}{2}$  S  $\frac{1}{2}$  Sec 33, T 49 N,  
R 100 W, PARK Co, WY.  
Meeteetse W. 7  $\frac{1}{2}$  Quad

Banded Meeteetse W.  
Limest. & soils  
looks a bit like the  
Horseshoe Canyon Fm. in  
Alberta

1.4 mi. N. on RTE 120  
from center of Meeteetse

Good Fossil Plant Prospect

W  $\frac{1}{2}$  S  $\frac{1}{2}$  Sec 33, T

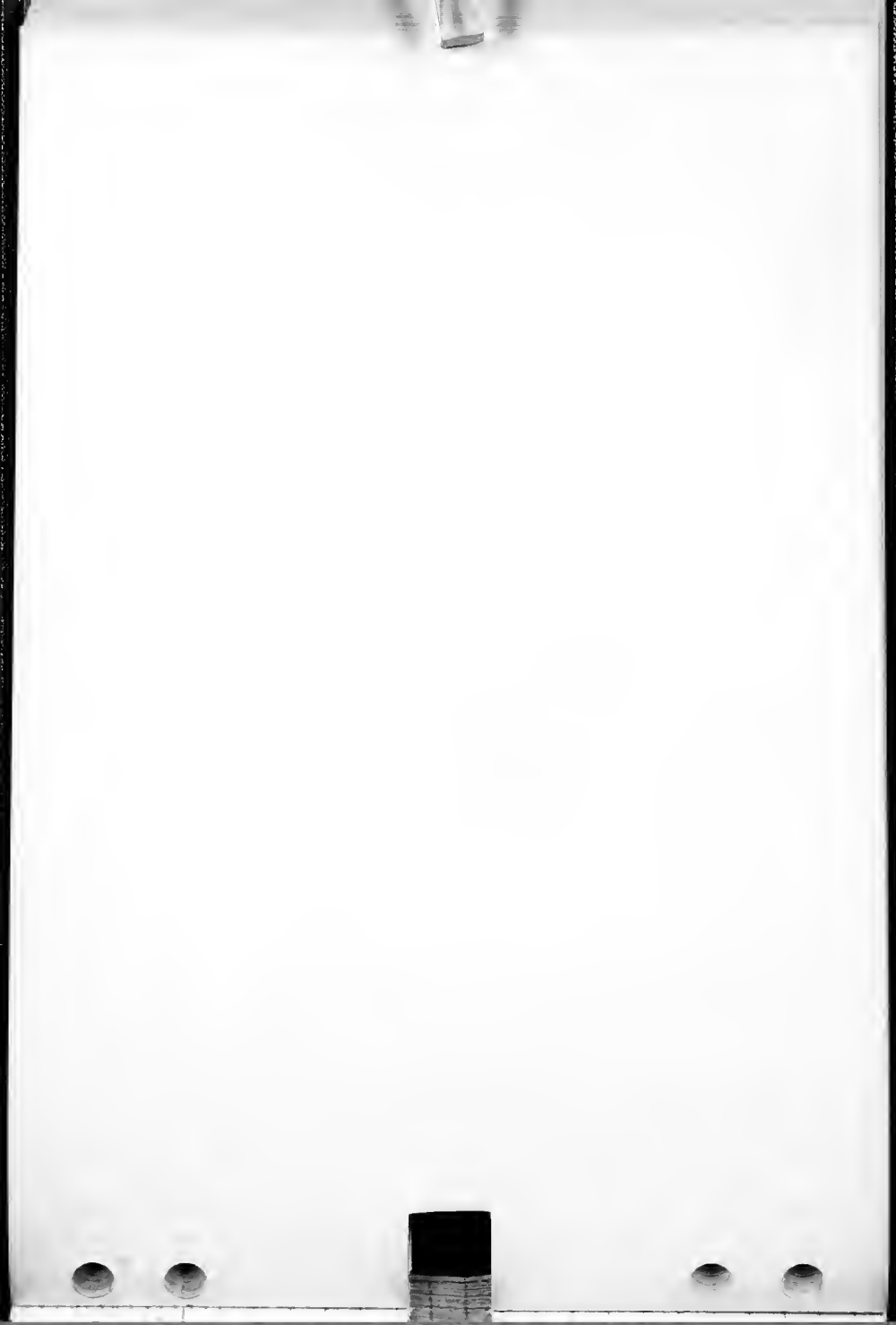


S. of Meeteetse on N7E 120

Mesa Verde-like ss. occupies  
much of basal 2/3's of  
Fm.

on Hot Springs Ca line.

TO EAST of road.  
tabular bedded material  
ss appears below.  
a FLUVIAL ss building  
up a ridge to  
EAST of road.





NE 1/4 Sec. 2, T45N  
R 90W, Hot Springs  
Co, Wyo

Eagle Pass 3 1/2

Loc. 6670 of Hewitt  
p. 24

2 2' COALS w/ interbedded  
CLAYS & muds & sands  
above a white unconsol  
ss.

Adjacent to Hewitt  
Sec. 25P

✓ for plants.

Nothing except  
ROOTS & fragments.

$$\begin{array}{r} 71.4 \\ 72.0 \\ \hline 6 \end{array}$$

8/5/88

SW 1/4, SE 1/4 Sec 33, T49N, R100W

8814

Lignite w Amber

From about middle  
of Merteece Fm.

in Merteece West 7 1/2

60m W, 100m N. of SE corner  
of Sec. 33, T49N, R100W

660m W, 145m N of SE corner of Sec. 33

8815

SW, SE, Sec 33, T49N, R100W  
PARK CO, WYO  
Merteece w 7 1/2

7117 ± 0.3

PLANT LOCALITY

in grey SITST 3' below  
a lignite 2/3 of way

to top of bluff

60' above base

Elatides  
Vitis olivacea } Dom  
Cedronia



8815 (CONT'D)

Amesoneuron

Cercidiphyllum ellipticum  
type

Entire leaf (Rhammites?)

Equisetum

Anemia

Platanus guilleimae

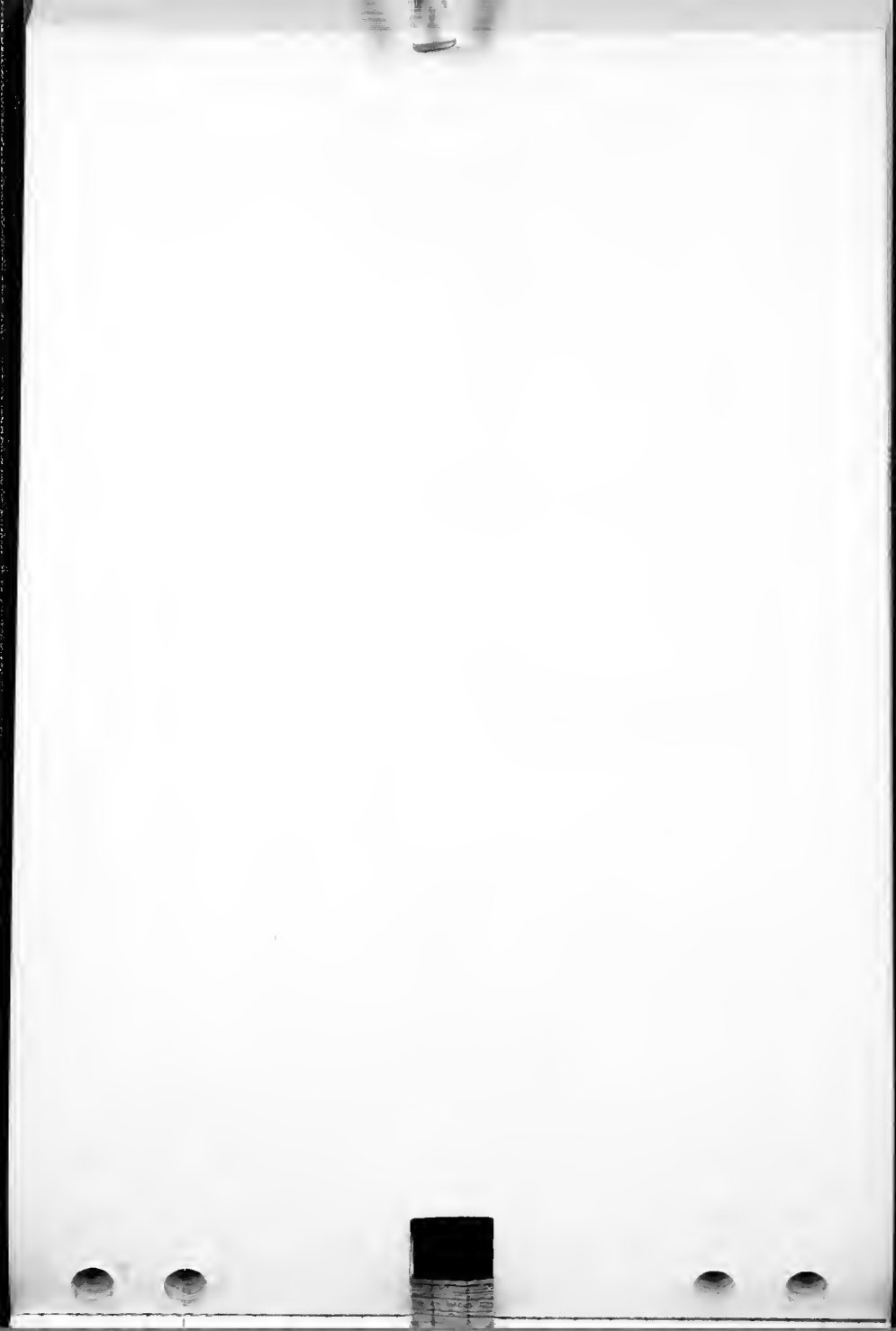
Taxodiaceae

~~Can~~

UNIT is a laminated  
SHALE AT  
CLAY base

Coarsening upward to  
a ft. grey SS  
at top above  
plants.

Then a lignite



8/6/88

8816

NW 1/4, NW 1/4, NW 1/4 Sec 17  
T 6 S, R 18 E, Carbon, Co. Mont.

McKAY RANCH Quad  
Livingston Volcanics?  
W fos

D ELATIDES

D TAXODIUM foliage  
cone

PLATANOID

D CELASTRUM TAURINENSIS?

Ginkgo

Opalophyllum

Pseudoguericus

PISITIA

Beds strat below these  
have complex Ophiorhiza  
burrows

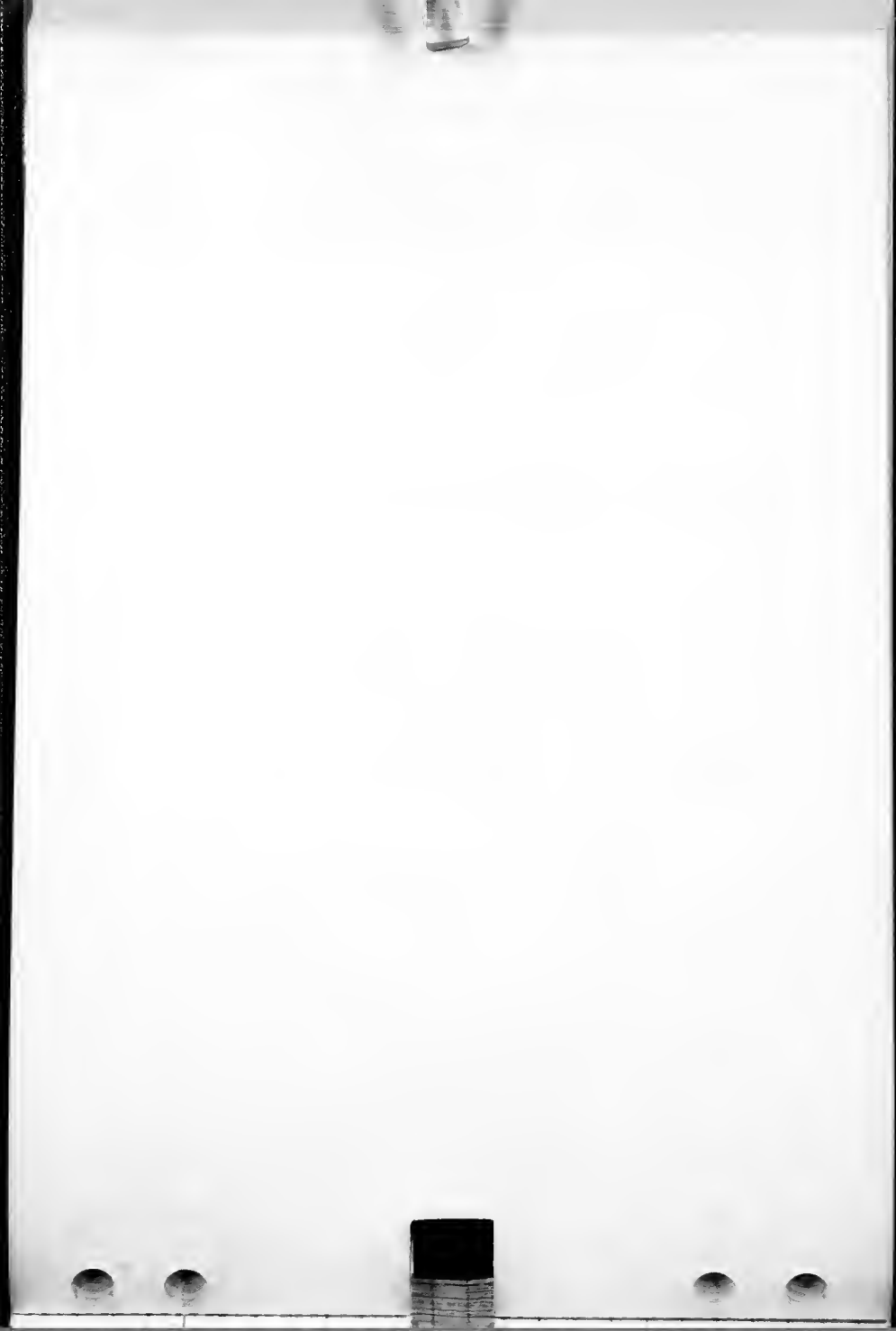
These beds drop AT  
top of hill

8816b

NE 1/4, SE 1/4, SW 1/4, Sec 8,  
T 6 S, R 18 E, Carbon Co.

MONT.

TAXODIUM CONES





K17188 SW 1/4, SW 1/4, Sec 14, T6N, R15E,  
Wheatland Co., MT.

8817

Ten O'clock GATE 7 1/2"

Bear / Hell Creek CONTACT

Bear a dirty tanish  
grey ss w. vague  
root & carbon films  
on bedding plane

Hell Creek a greenish  
grey mudst. &  
interbedded ss.

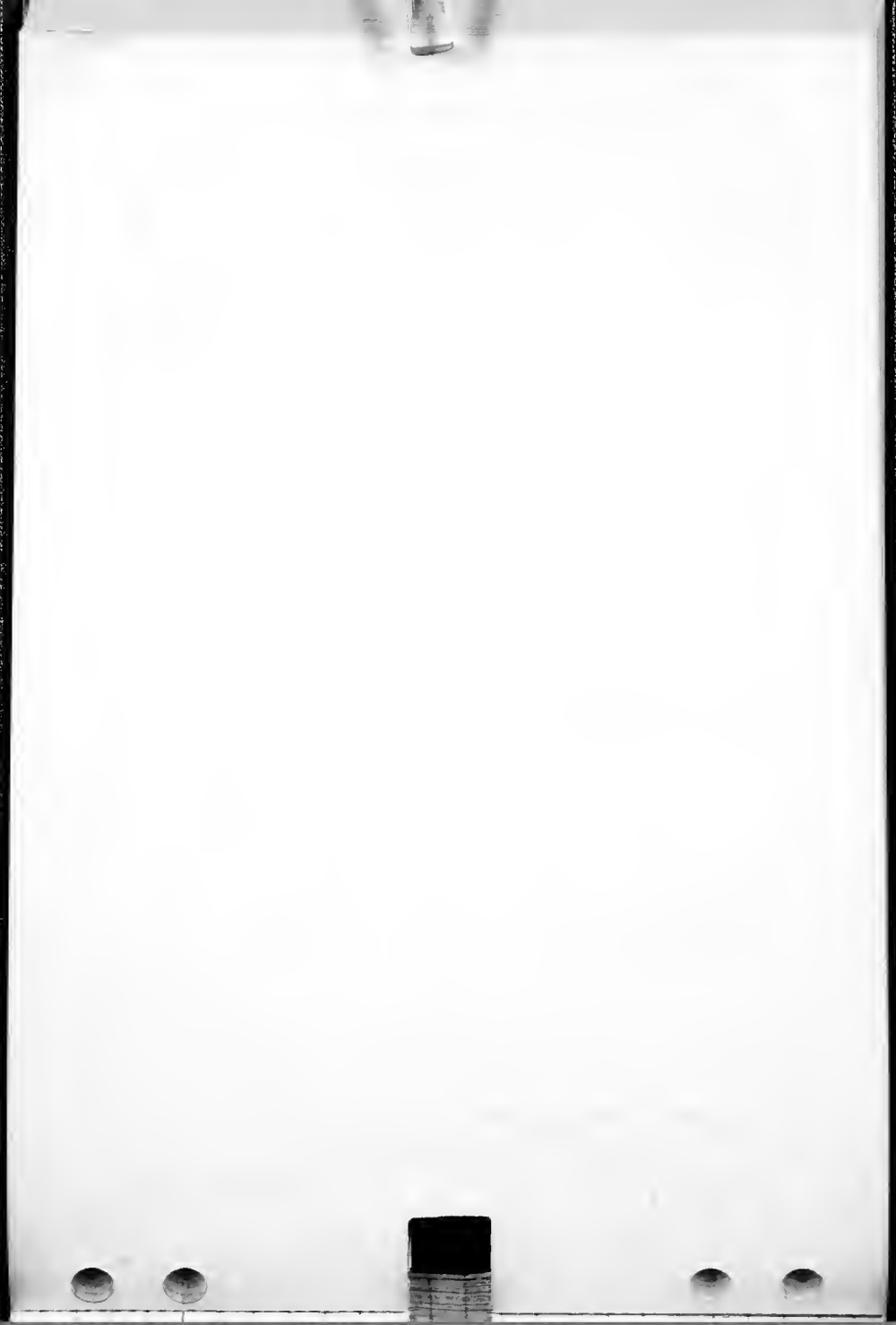
30 - 40 m - below Bear/H C  
CONTACT

Large, fulsome. worm burrows  
in mudst.

HAVE EATEN ALL OF THE  
ORGANIC MATTER

Dip 63° at 275° strike

~~8817b~~



88176

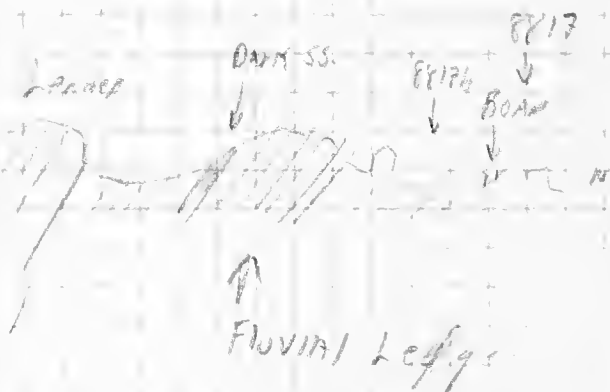
<sup>220</sup>  
~~500~~ MN, 120m E SE Cor., Sec 14, T6N,  
 R. 15E, Wheatland Co., MT.  
 Hell Creek TEN O'CLOCK GATE 7 1/2

90-150 m below

BEAR / HC CONTACT

MARINE GASTROPODS  
 IN A LIMESTONE LENS

8817C



DARK SS. AT BASE OF  
 FLUVIAL SECTION

ROOTED SS IN VICINITY  
 OUTCROPS CONTINUE

C is 540m N, 130m E, SE Cor. Sec 14.



8/7/88

8817 d

660 m N, 300 m E, SW Cor. Sec 14, T6N,  
R. 15E, Wheatland Co., MT.

Ten O'clock Gate 7 1/2

Lennep Fm

Rusty ss x sh.

Andesitic.

W

Fossil leaves. 60 m

from base of Fm

- All diatom

Possible Platanoids



Ten O'clock Gate 7'12

8817e

60m S, 480m E of NW Cor, Sec. 14, T6N  
R. 15E, Wheatland Co., MT.

Aht 100 m below

Top of Bearpaw sh.

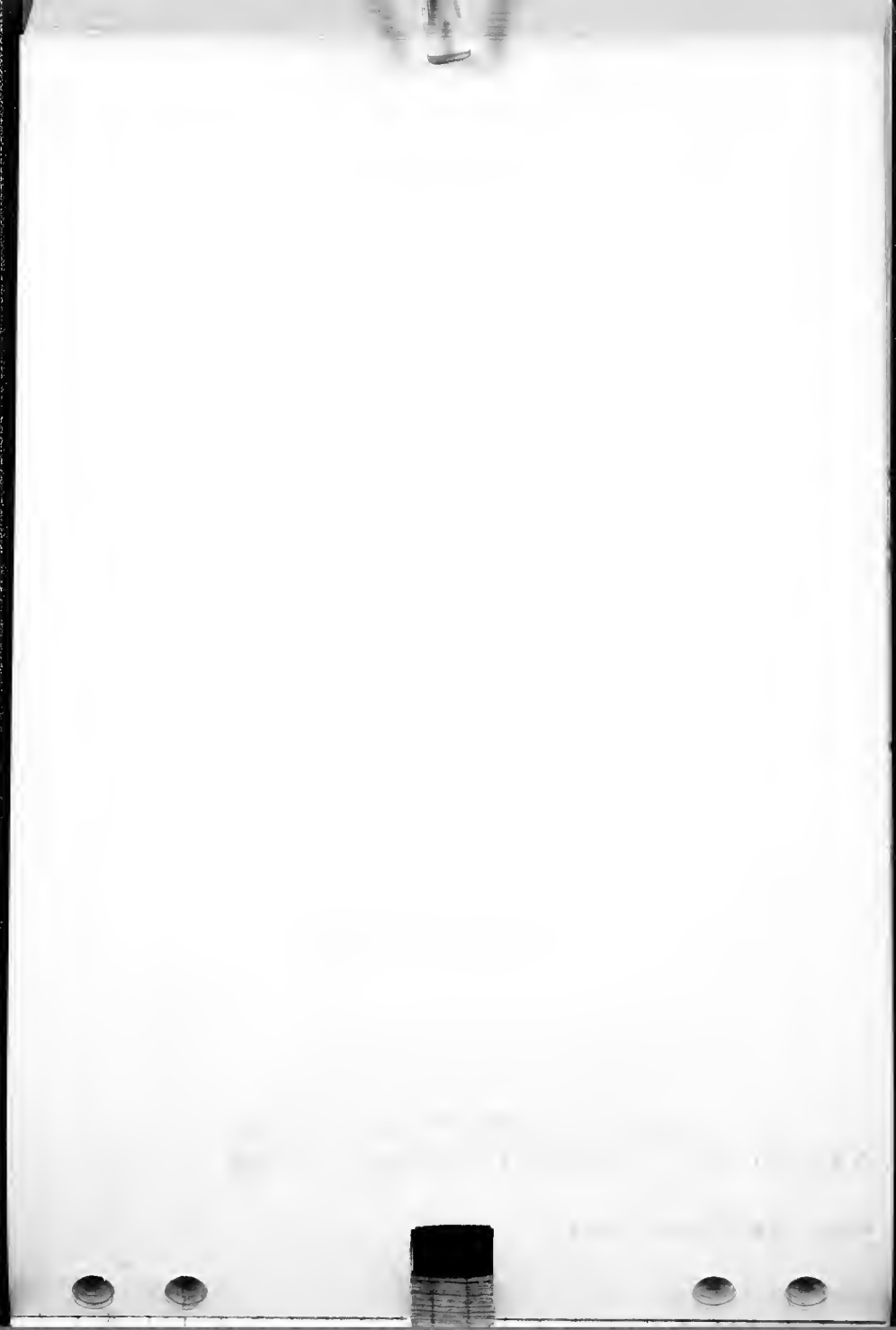
Ammonites

Sphenodiscus

Baculites grandis

Inoceramus

Clam



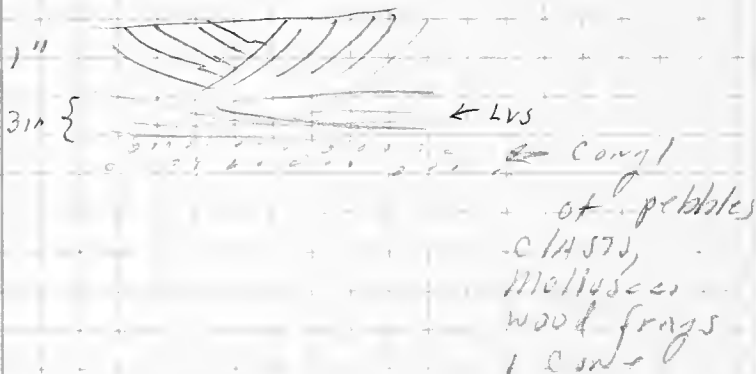


8818 380m S, 180m W, NE Cor, Sec 31,  
T 6 N, R 15 E, Wheatland Co, MT.  
Melville TW 7 1/2" Q

Torrejonian To3 Flora

AT base of a cross-  
bedded ss lens

SILTST interbedded 3" thick  
AT base



Platanus nobilis  
raynoldsii  
+ seed heads of PLAT  
Carya antiquorum  
Metasequoia occidentalis  
cone



8/8/89

9819

Upper Lebo Mbr F.U. Gp.

DARK grey SHALE  
w/

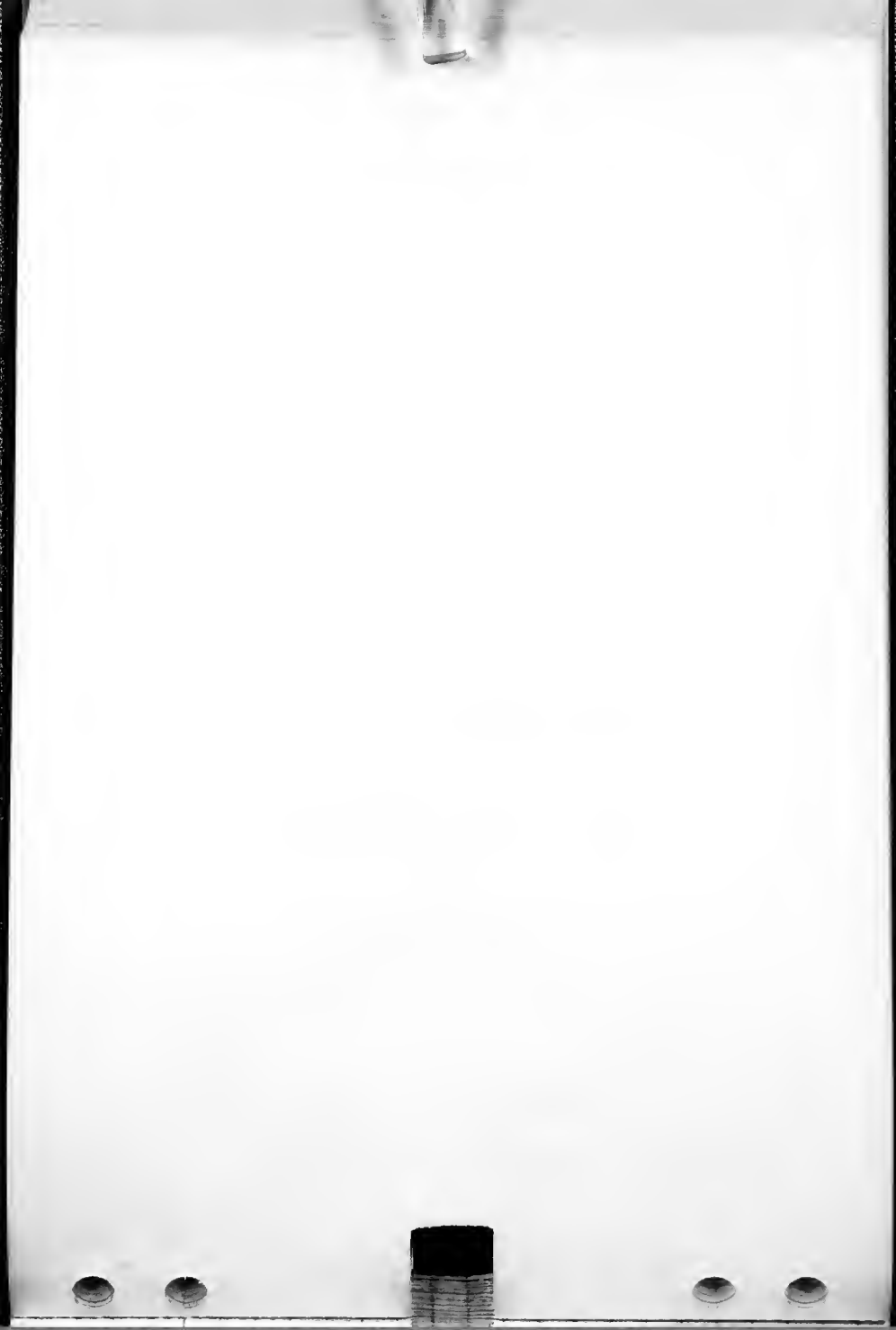
D { Zingibropsis  
Mentasegubia

- Cercidiphyllum

- STAMP like leaf

BAL SWAMP flora

- Torrejonian?



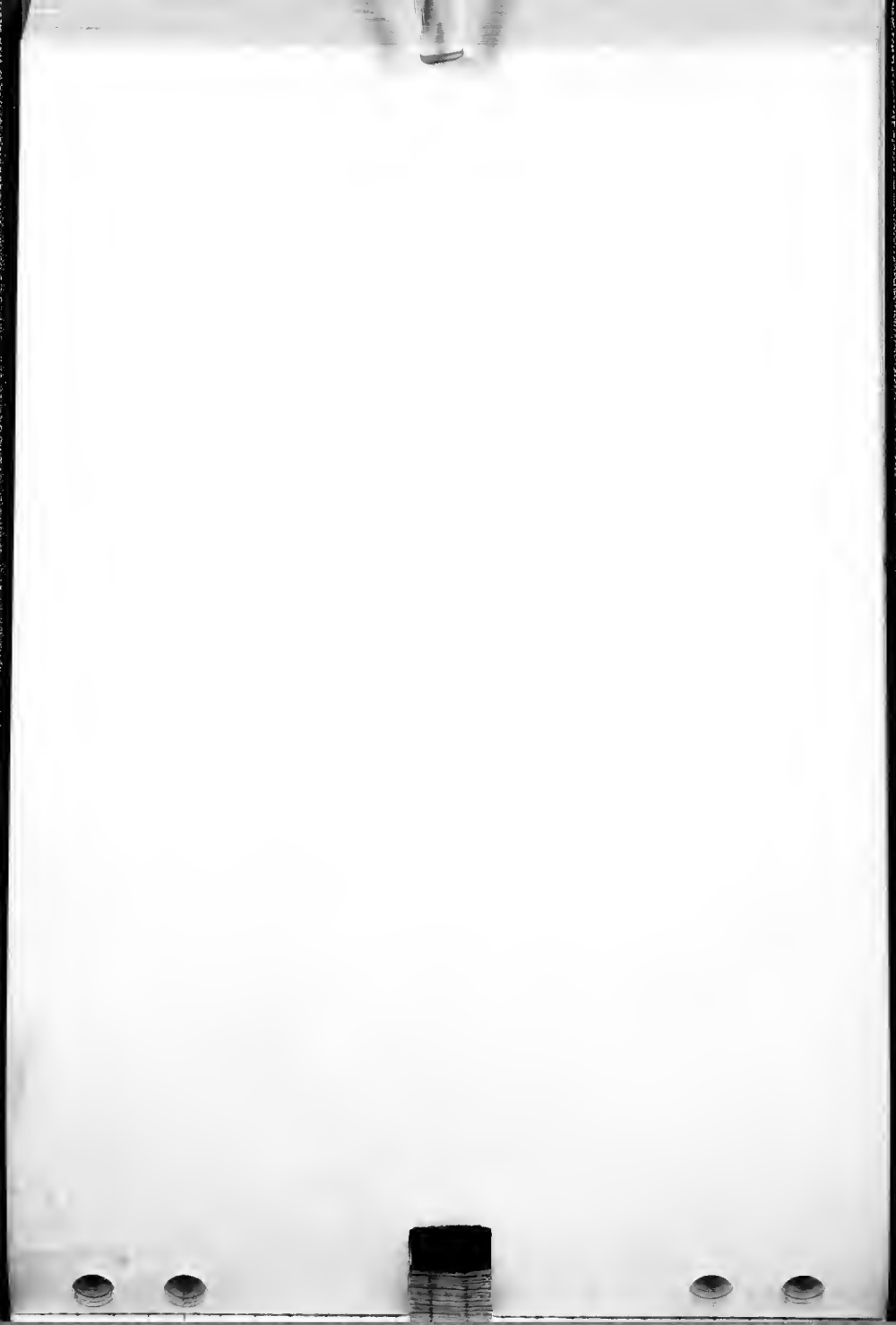
8/8/88

8820

Five mile Hill n. of  
Custer, Yellowstone Co., MONT.

olive greenish gumbo  
Hell Creek Sequence  
capped by yellow FT. Union  
SS & mudst.

8820 d 10-16 cm, above coal  
Coal #2 → ~~8820 c~~ 2 ft.  
immediately below co.  
Grey mudst 10 ft.  
Coal #1 → 1st coal ~~8820 b~~



Sec. 8820

Cliff  
forming  
SS

Grey mudst.  
comm. phings.  
iron bands

8820c COAL #3  
immediately below

42 cm

carb sh. mudst  
5.4 m rooted

8820d → 10-16 cm + cap

COAL #2

17.8 grey mudst  
sh

8820c

13 cm

grey mudst  
rooted at top  
w limonite  
bands.

8820b → COAL #1

2.0-4 m  
SS

14 cm

8820a 10 cm below coal #1

3.2 m

8820e  
Sample

grey siltst  
w limonite.

8820e  
5.5 cm

8820e immediately below  
COAL #3

8820d 10 cm + COAL #2

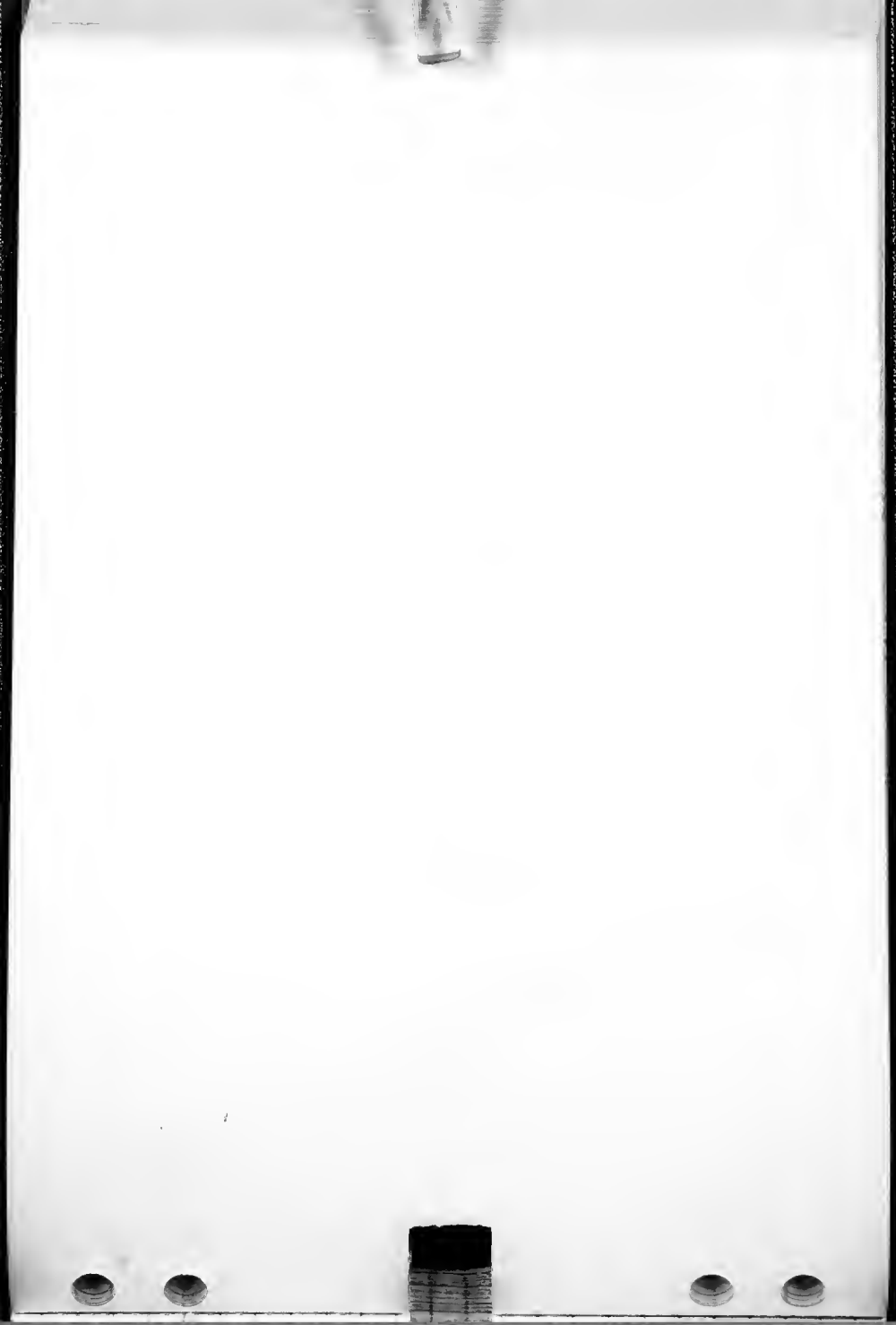
8820c immediately below  
COAL #2

8820b top 2 cm COAL #1

8820a 10 cm - COAL #1

8820z 25 cm below top

of grey siltst  
unit





8820

8821

2.5 mi mileage from Blue Equipment  
shed on e. side of  
road to Locality

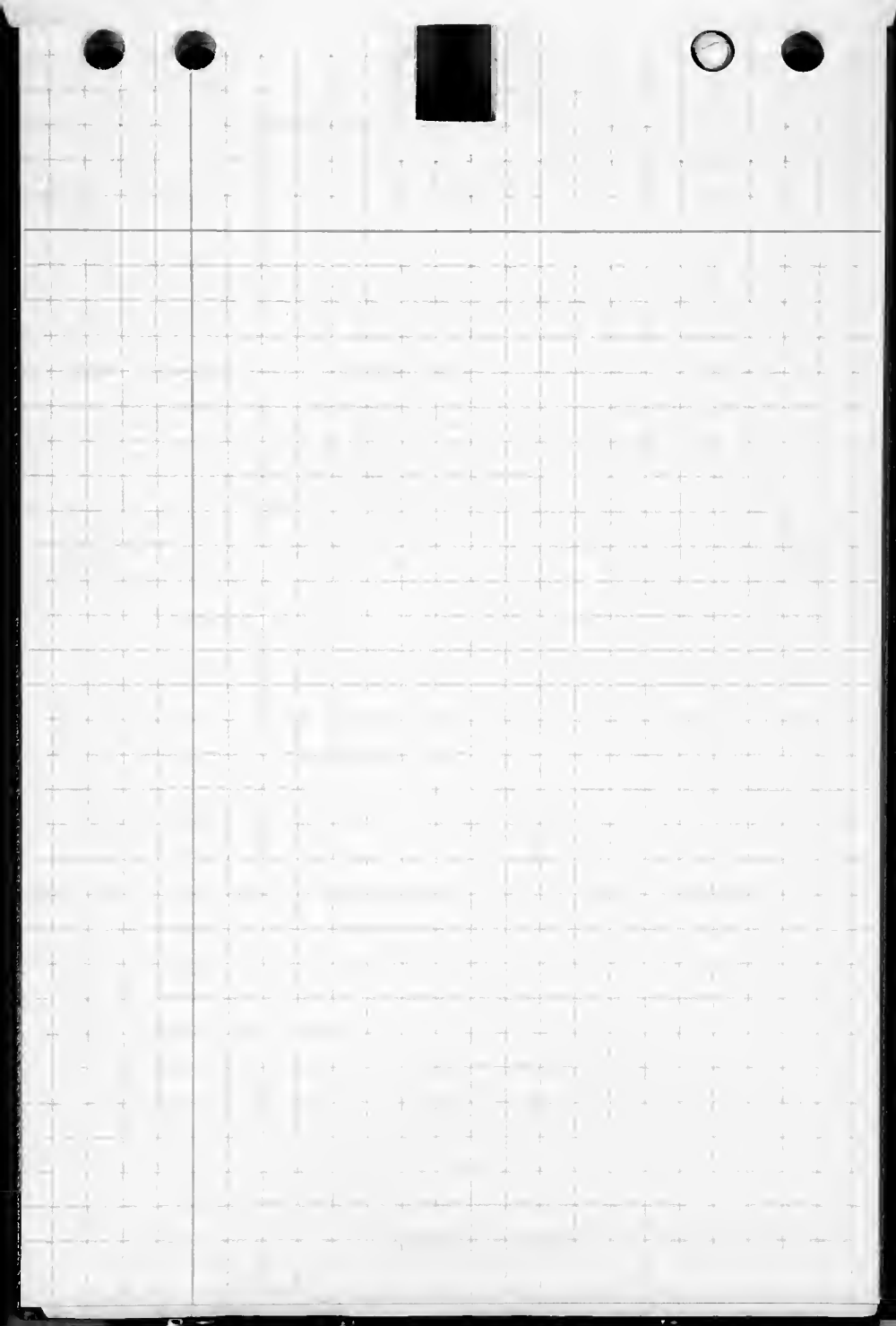
3.5 from end of Blacktop

4.1 to N bank of Yellowstone R.

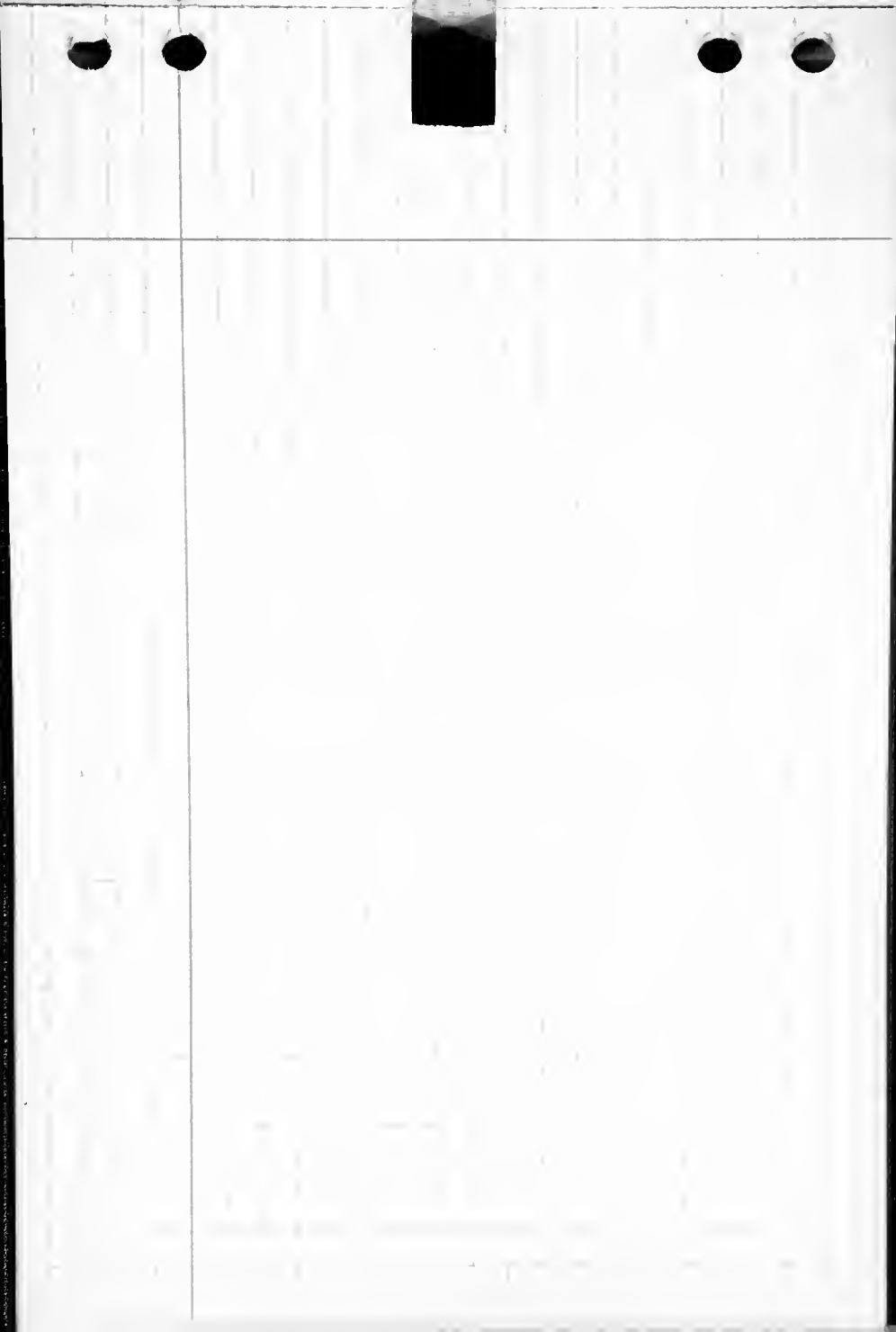
5.0 Custer exit of ~~at~~ I-94

12.2 EAST of Custer, MONT  
EXIT









IN STORE AT Red Lodge  
8/88

200 Sample Bags

50 ~~50~~ NO 8 1 1/2" Screws  
2 Screw sets #8 1 1/2"

Aluminum Foil

2 TAMPALINS

1 Web Belts

HAND AXE

Goose Neck for 5 gal Jerry Can

2 Dico Cement

1 EPOXY

SALT TABLETS

Sin Bloc STICK #15

KRYLOW

50 #10 1 1/2" X Screws

1 2LT CANTEEN

1 CANTEEN

200ft Coax Cord

1 Bottle Vodka

1 SPATULA

1 filter funnel

1 roll Aluminum foil

1 Gas goose neck

1 Griddle

1 HANDSTICK

